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**Datasheet for the decision
of 15 April 2016**

Case Number: T 1720/12 - 3.2.05

Application Number: 01965403.7

Publication Number: 1317345

IPC: B41J33/36, B41J33/54

Language of the proceedings: EN

Title of invention:

Tape drive and printing apparatus

Patent Proprietor:

Videojet Technologies, Inc.

Relevant legal provisions:

EPC 1973 Art. 83, 100(c)

Keyword:

Inadmissible extension (yes: main request; no: first auxiliary request)

Sufficiency of disclosure (yes)

Remittal to the department of first instance

Decisions cited:

G 0002/10, T 1727/12



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Case Number: T 1720/12 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 15 April 2016

Appellant: Videojet Technologies, Inc.
(Patent Proprietor) 1500 N. Mittel Boulevard
Wood Dale, IL 60191 (US)

Representative: Mark Lloyd Kenrick
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
23 July 2012 concerning maintenance of the
European Patent No. 1317345 in amended form.

Composition of the Board:

Chairman M. Poock
Members: O. Randl
D. Rogers

Summary of Facts and Submissions

- I. The appeal of the patent proprietor is directed against the interlocutory decision of the opposition division on the amended form in which the patent No. 1 317 345 could be maintained.

The opposition division had found the main request (patent as granted) and the first auxiliary request not to comply with the requirements of Article 100(c) EPC 1973 and had rejected the second auxiliary request under Article 100(b) EPC 1973. The third auxiliary request was found to satisfy the requirements of the EPC.

- II. The opponent (Markem-Imaje Ltd.) had also filed an appeal against the decision of the opposition division but has withdrawn the opposition and the appeal before filing a statement of grounds of appeal.
- III. A third-party intervention was filed by Markem-Imaje GmbH during the appeal proceedings and subsequently withdrawn.
- IV. The board has issued a communication pursuant to Rule 100(2) EPC containing *inter alia* an analysis of the expressions "measure of tension t" and "value t" as used in the original application. The appellant has filed comments in response to this communication.
- V. The appellant requested that the impugned decision be set aside and the patent be maintained as granted. As an auxiliary request, the appellant requested that the decision be set aside and the patent maintained on the basis of the first auxiliary request filed with letter of 29 February 2016 or remitted to the opposition

division for further consideration with a finding that the requirements of Articles 123 and 83 are satisfied.

VI. Claim 1 of the main request reads:

"A tape drive comprising two stepper motors (14, 15), two tape spool supports (8, 12) on which spools of tape (7, 11) may be mounted, each spool being drivable by a respective one of said stepper motors (14, 15), and a controller (17) for controlling the energisation of the motors such that the tape may be transported in at least one direction between spools mounted on the spool supports (8, 12), wherein the controller (17) is operative to energise both motors (14, 15) to drive the spools of tape in the direction of tape transport, and the controller (17) is configured to implement a control algorithm to calculate a length of tape to be added to or subtracted from a tape extending between the spools (7, 11) in order to maintain tension in the tape between predetermined limits and to control the motors (14, 15) to add or subtract the calculated length of tape to or from the tape extending between the spools (7, 11)."

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that "tension" was replaced by "a calculated measure of tension".

VII. The appellant argued as follows:

(a) Main request

The subject-matter of claim 1 is disclosed in the application as filed when considered as a whole. The disclosure of page 8, lines 1 to 5, when taken in connection with the subject-matter of claims 1 and 3 as

filed, discloses the subject-matter of claim 1 of the main request, bearing in mind the common general knowledge of the skilled person. The skilled person would understand that the "value t" mentioned on page 8, line 4 of the application is a tension (e.g. page 7, line 28).

In response to the preliminary opinion of the board the appellant pointed out the following:

The crucial passage on page 8 of the application as filed indicates that the "value t" is maintained between predetermined limits. The skilled person purposively considers this disclosure and can but come to the conclusion that he is being taught to maintain tension between predetermined limits. The skilled person would immediately realise that he is being taught that tension in the tape should be controlled. Whether this is done based upon tension itself or "a measure of tension" is not relevant to the invention.

The board's strict semantic analysis is not a proper approach. The entire specification is clear that what is important is to maintain tape tension between predetermined limits (see page 1, final three lines of the PCT specification).

There can be no doubt that the phrase "measure of tension" is also apposite to cover use of tension itself (i.e. not some proxy thereof).

The board itself notes that one has to conclude that the drafter of the original application has not consistently distinguished the tension from the "measure of tension". This lack of consistent distinction supports the position that the skilled

person would be concerned with maintaining tension (however determined or represented) between predetermined limits and would see no meaningful technical distinction as to whether that is done based upon tension itself or a calculated value thereof.

It would be wrong to conclude that because one (optional) way of determining tension involves calculation this is a requirement of any reference to "value t". Indeed, the board has itself acknowledged that the specification does use "t" (which is always inevitably a "value") to indicate tension, whether calculated or otherwise. As such, this analysis does not support any conclusion that the claims should be limited to a calculated value of tension, but on the contrary suggests that whether the value is calculated or not is of no import.

Passages such as page 9 line 3 clearly disclose that the actual tension is being maintained between predetermined limits. Indeed, that is the whole purpose of the specification, as noted at the foot of page 1 , cited above.

Therefore, the specification provides ample basis for a conclusion that tension is maintained between predetermined limits.

(b) First auxiliary request

The amendment directly addresses the board's preliminary finding and overcomes all objections.

Reasons for the Decision

1. The application under consideration was filed on 5 September 2001. According to Article 7 of the Act revising the EPC of 29 November 2000 (Special edition No. 4 OJ EPO 2007, 217) and the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the EPC of 29 November 2000 (Special edition No. 4 OJ EPO 2007, 219), Articles 83 and 100(c) EPC 1973 apply in the present case.
2. Main request
 - 2.1 Inadmissible extension
 - 2.1.1 Basis for claim 1

The opposition division reached the conclusion that claim 1 was not supported by the original application. The original claims did not disclose this particular combination, in particular because claim 17 as filed was dependent on claim 16, which itself depended on claims 14 and 13, etc. The features of dependent claims 16, 14, 13 etc. were, however, not incorporated into claim 1 as granted.

When the amendment was made, however, claim 17 was not invoked as support. The applicant (now appellant) explained that the "amendments made to claim 1 are based upon former claims 1 and 3 and also on page 8 lines 1 to 6 of the PCT specification as published." (Written submission of 9 October 2006, page 2; underlining by the board)

The passage on page 8, lines 1-6 reads:

"Preferably the controller implements a control algorithm to calculate a length of tape to be added to or subtracted from the tape extending between the spools in order to maintain the value t between predetermined limits and to control the stepper motors to add or subtract the calculated length of tape to the tape extending between the spools."

This passage differs from the last feature of claim 1 in particular in that it refers to "the value t " where claim 1 has "tension in the tape".

The opposition division was aware of this passage, but found the reference to "the value t " in this passage to refer to the "measure of tension t " of page 7, line 28, which was the result of a calculation. It objected to the absence of this calculation from claim 1 (reasons for the decision, sheet 5, point 20).

2.1.2 Although the description restates the content of the claims, it is not appropriate to read the precise claim dependencies into this part of the description if the description is drafted in more general terms and suggests combinations that do not have a precise counterpart in the claims. As the absence of a reference to the specific formula of claim 16 shows, the first part of the description is not a mere repetition of the claims. The board will, therefore, concentrate on the passage on page 8 rather than on claim 17.

2.1.3 "Value t "

In claim 17 as filed, "the value t " clearly refers to the value t as calculated from the formula of claim 16 as filed. The situation is somewhat different for the parallel passage on page 8 of the original description. As stated above, the preceding description does not disclose the formula of claim 16. However, the last paragraph of page 7 mentions a "measure of tension t " that "may be calculated from measures of power supplied to the two motors, measures of the spool radii, calibration factors for the two motors related to the step rate of the motors". The preceding paragraphs make clear that the tension under consideration is a "tape tension" (e.g. page 7, line 24).

Therefore, the question arises what exactly is meant by "the value t ".

(a) "Measure of tension t "

The expression "measure of tension t " as such is ambiguous, because here " t " could refer to either the tension itself or the "measure of tension".

(b) Measure of tension vs. tension

These two concepts are not interchangeable: "a measure of tension" is not equivalent to "tension". The Oxford English dictionary defines "a measure of ..." as "a quantity (as of time, money, etc.) which may be used to calculate or gauge a correlative quantity; (also) a value computed as a gauge or quantification of something". Thus "a measure of tension" means a quantity that is correlated to the tension, so that the actual tension can be gauged via this quantity. In many technical situations a certain quantity X may be difficult to measure but it is possible to derive

another quantity Y from available data, Y being correlated to X ($Y \propto X$), so that the behaviour of quantity X can be gauged by computing quantity Y, which is "a measure of X".

The disclosure of the application as filed is consistent with this understanding of "measure of"; it uses the expression "measure of (tape) tension (t)" several times:

- page 7, line 20, where it is stated that "a measure of tape tension may be calculated by reference to a measure of motor step rate, the calibration data related to the step rate, and the power consumed by the motor" (underlining by the board); see also original claim 13;
- page 7, line 28: "A measure of tension t may be calculated from measures of power supplied to the two motors, measures of the spool radii, calibration factors for the two motors related to the step rate of the motors." (underlining by the board)
- page 9, line 4: "Tension monitoring makes it possible to generate a fault-indicating output if the measure of tension falls below a minimum acceptable limit to indicate for example a tape breakage.";
- page 34, line 24: "The equation can therefore be resolved to derive a measure of tension t as follows ..."; see also original claim 16.

Thus when the original application refers to a "measure of tension", it always designates a calculated value from which information on the actual tension can be derived.

2.1.4 "t"

The use of the letter "t" suggests that the tension itself (rather than a measure for the tension) is designated, because physical quantities are often abbreviated by their first letter (such as time t, distance d etc.). The application itself mentions "tension t" without any reference to a "measure" several times:

- page 34, line 18: "t is the ribbon tension";
- page 35, lines 6 and 8, page 36, line 19, page 40, line 19: "measured tension t".

That being said, whenever a formula for the calculated "measure of tension" is given (page 34, line 25; claim 16 as filed), the latter is also designated by t.

So one has to conclude that the drafter of the original application has not consistently distinguished the tension from the "measure of tension" and has designated both quantities with the letter "t".

2.1.5 "Value"

The fact that a "value t" (rather than a "tension t" or a "measure of tension t") is mentioned in page 8, line 4 of the description is relevant because the preceding description (sentence bridging pages 7 and 8) mentions that "[a] calibration scaling factor may also be used to translate the calculated tension into a more interpretable value." Here the "value" clearly refers to a quantity based on a calculated tension. Therefore, it is likely that the subsequent mention of the "value t" also refers to a calculated tension.

2.1.6 Measured and monitored tensions

The application clearly envisages the case where the "measure of tension" is maintained between predetermined limits (see e.g. claim 17 as filed in connection with claim 16). Is there an unambiguous disclosure of the actual tension being maintained between predetermined actual tension limits?

As already noted, the original application sometimes mentions the "measured tension t" (page 35, lines 6 and 8, page 36, line 19, page 40, line 19), but it is clear from the immediate context that what is meant is a tension calculated from measured parameters (see the reference to algorithms on page 35, line 5, and to equation (3) on page 40, lines 19-20). Therefore, the expression "measured tension" is equivalent to "measure of tension".

The same can be said in respect of "monitored tensions". The semantic range of the verb "monitor" is large and may include direct measurements of the monitored quantity, but in most passages related to monitoring tensions it is clear that no direct measurements can be meant (underlining by the board):

- page 9, line 3: "Tension monitoring makes it possible to generate a fault-indicating output if the measure of tension falls below a minimum acceptable limit to indicate for example a tape breakage."
- page 30, lines 19-22: "... changes in spool diameters over time are monitored by reference to the stepper motors and tension in the ribbon is directly monitored by reference to the current drawn by the stepper motors.";

- page 32, lines 1-2 mentions "tension monitoring calculations";
- paragraph bridging pages 33 and 34: "During motor calibration, no spools are mounted on the outputs of the stepper motors 92 and 93. For a given step rate for each motor the outputs of the ADC's 87 and 88 are recorded such that x and V for each motor at each of the preselected step rates is known. Those values are then used as described below to enable direct monitoring of ribbon tension in the ribbon between the spools 94 and 95, these spools having been mounted on the output shafts of the stepper motors 92 and 93."
- page 37: "The method of monitoring ribbon tension as described with reference to Figure 18 relies upon sampling current supplied to the motor drives 81 and 83 by sampling voltages developed across series resistors 83 and 85."

Having considered all the above, the board reaches the conclusion that the skilled person would understand that the "value t " mentioned in page 8, line 4 of the description is a calculated measure of tension.

2.1.7 Mode of calculation

The description of the original application states that "A measure of tension t may be calculated from measures of power supplied to the two motors, measures of the spool radii, calibration factors for the two motors related to the step rate of the motors. A calibration scaling factor may also be used to translate the calculated tension into a more interpretable value." (paragraph bridging pages 7 and 8). The opposition division appears to have considered that the absence of such reference to motor power, spool radii

and calibration factors deprived claim 1 of support in the original disclosure. The appellant has invoked the statement that the measure of tension t "may be calculated" to indicate that the disclosed method of calculating was merely exemplary.

The verb "may" can have different meanings. That a quantity C "may be calculated from A and B " expresses the fact that there is - at least - one possibility to calculate C (i.e. from A and B) but the statement as such does not allow to draw conclusions as to whether this way of calculating is the only one or not; this has to be determined from the context of the statement.

When reading the part of the original description to which the critical passages of page 7 and 8 belong, one notes that the verb "may" is invariably used to introduce features that are also found in the dependent claims. For instance, the feature of dependent claim 3 ("... wherein both of the motors are stepper motors.") becomes "The motors may both be stepper motors." (page 6, line 22). The same is observed for claims 4, 6, 9, 10, 12-15, 18 etc. Thus a comparison of the original dependent claims (which recite features the drafter considered to be optional) and the corresponding parts of the description strongly suggests that "may" introduces non-mandatory options.

Thus, when it is said that "[a] measure of tension may be calculated from measures of power supplied to the two motors ...", one has to understand that a measure of tension can be calculated in this way but that there might be other ways of computing a meaningful measure of tension. If the skilled person, using his common general knowledge, is aware of another measure of tension, he understands that it could be used, too.

2.1.8 Conclusion

When claim 1 was amended before the examining division (Written submission of 9 October 2006), the expression "value t" on page 8, line 4 of the application as filed has been replaced by "tension in the tape". The latter expression refers to tension in general, including the actually measured tension. As has been explained above, the board reaches the conclusion that the "value t" mentioned in page 8, line 4 of the description is a calculated measure of tension. The original application never envisages a direct measurement of the tape tension. Claim 1 having been drafted in such a way that it is not limited to keeping the calculated measure of tension between predetermined limits, it extends beyond the direct and unambiguous disclosure of the application as filed.

In other words, it is not the absence in claim 1 of the particular mode of calculation disclosed in the last paragraph of page 7 that is problematic, but the absence of reference to a calculated measure of the tension.

The board has, therefore, reached the conclusion that the opposition division rightly rejected the main request under Article 100(c) EPC 1973.

2.2 Consideration of the adverse arguments

2.2.1 Appropriateness of the above analysis

The appellant has criticised the board's "strict semantic approach" as inappropriate and has pointed out that the skilled person would not be drawn into a

semantic analysis. The board disagrees, for the following reasons.

In its decision G 2/10 (OJ EPO 2012,376), the Enlarged Board of Appeal has summarised the established jurisprudence of the boards of appeal relating to amendments. According to this "gold standard", amendments are possible only "within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of these documents as filed" (point 4.3 of the reasons).

In this context, it is important to realise that the skilled person is a fictitious person that does not actually exist. It is, therefore, not appropriate to imagine that the skilled person would proceed in the same way as some average real-world technician. It may well be that such a technician working in a field of mechanics would only cursorily read a patent application, or restrict himself to contemplating the figures, or even not read patent applications at all, as the case may be, but the same cannot be said of the fictitious skilled person. What has to be ascertained when examining compliance with Article 123(2) EPC is what the skilled person would derive directly and unambiguously from the application as filed. In the absence of explicit disclosure this can only be established by means of a thorough analysis of the original application. If such an analysis leaves room for doubt regarding the disclosure of the original application with respect to a given feature, then this feature cannot be said to have been unambiguously disclosed.

2.2.2 Relevance of the distinction

The appellant has pointed out that it was not relevant to the invention whether the tape tension is controlled based upon tension itself or a "measure of tension". The board agrees that the skilled person considering the original application would understand that directly measuring the tension and keeping it within boundaries would also lead to the same technical results. This reasoning, however, is based on equivalences and, as such, more appropriate in the context of inventive step. When novelty and admissibility of amendments are to be examined, however, equivalence is not an appropriate criterion. In this context, what matters is direct and unambiguous disclosure.

2.2.3 Lack of clarity of the original application

The appellant shares the view of the board that the drafter of the original application has not consistently distinguished the tension from the "measure of tension" but argues that the lack of consistent distinction supports its position that the skilled person would not distinguish between tension and calculated values thereof. The board does not agree. If followed, this approach would result in it being advantageous for applicants to draft inconsistent applications because this would allow a greater variety of amendments. Again, it has to be kept in mind that amendments can only be based on what a skilled person would derive directly and unambiguously from the original application. If an element of the disclosure is unclear, it cannot serve as a basis for valid amendments.

2.2.4 Other cited passages

The board is unable to see how the passage on page 9, lines 3-5 ("Tension monitoring makes it possible to generate a fault-indicating output if the measure of tension falls below a minimum acceptable limit to indicate for example a tape breakage.") can be said to clearly disclose that the actual tension is being maintained between predetermined limits. This passage clearly refers to the measure of tension.

The statement on the bottom of page 1 ("It will be appreciated that maintaining adequate tension is an essential requirement for the proper functioning of the printer.") can be said to define the overall purpose of the invention, but this does not alter the fact that the only way to reach that goal that is unambiguously disclosed in the application is to control a measure of the tension rather than the tension itself.

2.2.5 Conclusion

Having considered the adverse arguments, the board maintains its conclusion that the main request has to be dismissed under Article 100(c) EPC 1973.

3. First auxiliary request

3.1 Inadmissible extension

The additional feature of claim 1 of the auxiliary request clearly overcomes the objection raised against claim 1 of the main request.

The board is satisfied that claim 1 fulfills the requirements of Article 123(2) EPC.

3.2 Sufficiency of disclosure

The opposition division, when dealing with auxiliary request 2 before it, has found that the patent enabled the skilled person to carry out the invention in the way disclosed but then found that the subject-matter of claim 1 did not meet the requirements of Article 83 EPC 1973 because the patent did not give any technically enabling disclosure to use another method to monitor the tension in the tape.

Although this objection was not raised against what is now the first auxiliary request, it appears to be applicable in principle.

However, the board is not persuaded by the reasoning of the opposition division. The division has not established that there are other methods of monitoring tension of which the skilled person would be aware but which he would not know how to carry out. Therefore, this objection appears to be purely speculative and, therefore, unfounded (*cf.* parallel decision T 1727/12, point 1.5 of the reasons).

Thus the board reaches the conclusion that the opposition division has not established that claim 1 fails to comply with the requirements of Article 83 EPC 1973.

The board is satisfied that the requirements of Article 83 EPC 1973 have been met.

4. Remittal to the opposition division

The opposition division has found the subject-matter of auxiliary request 3 before it to be both novel and

inventive. Claim 1 of the first auxiliary request is considerably broader than claim 1 of the request which the opposition division found to be allowable. It is, therefore, necessary to examine the subject-matter of claim 1 of the first auxiliary request with respect to novelty and inventive step. Consequently, the board remits the case to the opposition division for further processing.

5. Oral proceedings

Oral proceedings were requested "[i]n the event (but only in the event) that" neither of the requests of the appellant were to be allowed. As the remittal for further processing on the basis of the first auxiliary request was one of the requests of the appellant, it is not necessary to hold oral proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division for further processing on the basis of the first auxiliary request.

The Registrar:

The Chairman:



D. Meyfarth

M. Poock

Decision electronically authenticated